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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,509	01/27/2004	Jung Tae Kang	6192.0146.D1	9956

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MACPHERSON KWOK CHEN & HEID LLP
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EXAMINER

NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
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2629

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10/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/764,509

Applicant(s)

KANG ET. AL.

Examiner

Jimmy H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-23,25-31 and 33-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-23,25-31 and 33-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/621,825.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/13/2007 has been entered. Claims 18-23, 25-31 and 33-40 are currently pending in the application. An action follows below:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 37-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term “a **receiving container**” in **claim 37** is used by the claim to mean “receiving the display panel and closely attaching to the signal converting unit”, while the accepted meaning is “a mold frame”. The term is indefinite because the specification does not clearly **redefine** the term.

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As to claims 38-40, since these claims depend upon claim 37, these claims are therefore rejected for the same reason set forth in claim 37 above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18-23 and 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baek et al. (US 6,977,640 B1, hereinafter Baek), and further in view of Takahashi et al. (US 5,889,572), hereinafter Takahashi.

As to claims above, the claimed invention is read in the Baek reference as follows: Baek discloses a known display device (see Fig. 4) comprising a **display panel** (LC panel 10, see Fig. 4) displaying an image; a **mold frame** (a panel housing 22A; see Fig. 6) receiving the display panel (10) (see Fig. 6); a **second PCB** (a board including a timing control board 16 and FPC 21/13, 15; see Figs. 4-6) comprising a driving circuit PCB (16) closely attached to the **rear plane** of the mold frame (22A) (the **bottom surface** of the panel housing 22A; see Fig. 6; col. 3, lines 54-58 and col. 4, lines 1-3) and having a first portion (21/13, 15) electrically connected to a source driver circuitry (a circuitry including source drivers 14) without using a separate connecting member (see Figs. 4-6). Further, as noting in Figs. 4 and 5, Baek further teaches the source driver circuitry (14) electrically coupled to the first portion (top portion) of the display panel (10) through column lines (CL) and provided on the lower substrate (10a) and the gate driver circuitry (the circuit including row drivers 12) electrically coupled to the second portion

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(left portion) of the display panel (10) through row lines GL and provided on the lower substrate (10a). Accordingly, Baek discloses all limitations of these claims except that Baek does not disclose the source driver circuitry (14) implemented by a separate first source PCB, which is attached to the display panel through a first tape carrier package (TCP), and a gate driver circuitry (12) implemented by a separate third gate PCB, which is attached to the display panel through a third tape carrier package (TCP), as presently claimed.

However, Takahashi discloses a related display device comprising a source driver circuitry implemented by a separate first source PCB (600), which is attached to a first (top) portion of the display panel (100) through a first tape carrier package (TCP), and a gate driver circuitry implemented by a separate third gate PCB (610), which is attached to a second (left) portion of the display panel through a third tape carrier package (TCP) (see Fig. 3, col. 2, lines 34-38). Takahashi further teaches the first and third TCPs including driving ICs (see Fig. 2, col. 2, lines 34-38). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the source driver circuitry and the gate driver circuitry disclosed by Baek with the source PCB, gate PCB and TCPs, in view of the teaching in the Takahashi reference, because this would reduce the so-called frame area, as taught by Takahashi (see col. 1, lines 48-54).

7. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baek in view of Takahashi as applied to claim 18 above, and further in view of Furuhashi et al. (US 5,909,205), hereinafter Furuhashi.

As to claim 33, Baek further teaches the display device comprising a signal converting unit (a scanning receiver 42, see Fig. 4) electrically connected to the computer body (20) through

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a FPC (11), for receiving and decoding (converting) RGB video signal and timing control signals (see Figs. 4 and 5, col. 3, lines 12-15), and electrically connected to the second PCB (16) through a third connecting member (see Fig. 4), for providing the converted RGB video signal to the second PCB (16) (see col. 3, lines 12-19). Baek does not expressly teach the RGB being analog or digital and the signal converting unit converting analog RGB video signal into digital video signal, as presently claimed.

However, Furuhashi discloses a related display device comprising a signal converting unit (a unit comprising elements 104, 109, 110, 112 and 118; see Fig. 1) including an A/D converter (104) receiving analog video signal (102) externally provided by the computer, into a digital video signal and providing the converted signal to the display timing generating circuit (120) (the second PCB); see Fig. 1, col. 7, lines 1-22 and col. 8, lines 7-12. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide an A/D converter in the signal converting unit of Baek, in view of the teaching in the Furuhashi reference, because this would allow the display device of Baek capable of receiving an analog video signal from the computer, as known by a person of ordinary skill in the art.

As to claim 34, Fig. 6 of the Baek reference expressly shows the signal converting unit (42) and the second PCB (16, 21) closely attached to a rear plane of the mold frame (the bottom surface of the panel housing 22A; see col. 3, lines 54-58 and col. 4, lines 1-3). Furuhashi discloses the first connecting member as discussed in the rejection to claim 18 above. Accordingly, Baek in view of Takahashi and Furuhashi discloses the invention of claim 34.

As to claims 35 and 36, Baek discloses the third connecting member for connecting between the signal converting unit (42) and the second board (16) (see Fig. 4). Baek does not

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expressly teach the third connecting member comprising an upper socket and lower socket, as presently recited in claim 35, or a biting connector, as presently recited in claim 36. However, Official Notice is taken that both the concept and the advantages of utilizing a connecting member comprising an upper socket and lower socket, or a biting connector, as presently claimed, are well known and expected in the art. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to replace the third connecting member of Baek with the known connecting member, which comprises either an upper socket and lower socket or a biting connector, because it would allow the signal converting unit easily separated from the second PCB without any special tool, as known by a person of ordinary skill in the art.

8. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baek in view of Takahashi, and further in view of Furuhashi.

As to claims 37 and 38, the claimed invention may be read in the Baek reference as follows: Baek discloses a known display device (see Fig. 4) comprising a **display panel** (LC panel 10, see Fig. 4 or 6) displaying an image; a **second connecting member** (FPC 21/13, 15; see Figs. 4-6) attached to a first portion of a **second PCB** (a timing control board 16, see Figs. 4-6), which is electrically connected to a **source driver circuitry** (a circuitry including source drivers 14) through the second connecting member (FPC 21/13, 15, see Figs. 4-6). Further, as noting in Figs. 4 and 5, Baek further teaches the source driver circuitry (14) electrically coupled to the first portion (top portion) of the display panel (10) through column lines CL and provided on the lower substrate (10a) and the gate driver circuitry (the circuit including row drivers 12) electrically coupled to the second portion (left portion) of the display panel (10) through row

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lines GL and provided on the lower substrate (10a). Baek further teaches the display device comprising a **signal converting unit** (a scanning receiver 42; see Fig. 4 or 6) electrically connected to the computer body (20) through a FPC (11), for receiving and decoding (i.e., converting) RGB video signal and timing control signals (see Figs. 4-5; col. 3, lines 12-15), and electrically connected to the second PCB (16) through a **third connecting member** (see Figs. 4-5) for providing the converted RGB video signal to the second PCB (16) (see col. 3, lines 12-19). Furthermore, Baek teaches the signal converting unit (42) closely attached to a rear plane of the receiving container (the bottom surface of the panel housing 22A) (see Fig. 6; col. 3, lines 54-58 and col. 4, lines 1-3). Accordingly, Baek discloses all limitations of claim 37 except that Baek does not disclose the source driver circuitry (14) implemented by a separate first source PCB, which is attached to the display panel through a first tape carrier package (TCP), and a gate driver circuitry (12) implemented by a separate third gate PCB, which is attached to the display panel through a third tape carrier package (TCP), and the RGB being analog or digital and the signal converting unit converting analog RGB video signal into digital video signal, as presently claimed.

However, Takahashi discloses a related display device comprising a source driver circuitry implemented by a separate first source PCB (600), which is attached to a first (top) portion of the display panel (100) through a first tape carrier package (TCP), and a gate driver circuitry implemented by a separate third gate PCB (610), which is attached to a second (left) portion of the display panel through a third tape carrier package (TCP) (see Fig. 3, col. 2, lines 34-38). Takahashi further teaches the first and third TCPs including driving ICs (see Fig. 2, col. 2, lines 34-38). It would have been obvious to a person of ordinary skill in the art at the time of

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the invention was made to implement the source driver circuitry and the gate driver circuitry disclosed by Baek with the source PCB, gate PCB and TCPs, in view of the teaching in the Takahashi reference, because this would reduce the so-called frame area, as taught by Takahashi (see col. 1, lines 48-54).

However, the combination of Baek and Takahashi fails to teach the RGB being analog or digital and the signal converting unit converting analog RGB video signal into digital video signal, as presently claimed. Furuhashi discloses a related display device comprising a signal converting unit (a unit comprising elements 104, 109, 110, 112 and 118; see Fig. 1) including an A/D converter (104) receiving analog video signal (102) externally provided by the computer, into a digital video signal and providing the converted signal to the display timing generating circuit (120) (the second PCB); see Fig. 1, col. 7, lines 1-22 and col. 8, lines 7-12. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide an A/D converter in the signal converting unit of Baek, in view of the teaching in the Furuhashi reference, because this would allow the display device of Baek capable of receiving an analog video signal from the computer, as known by a person of ordinary skill in the art.

As to claims 39 and 40, Baek discloses the third connecting member for connecting between the signal converting unit (42) and the second board (16) (see Fig. 4). Baek does not expressly teach the third connecting member comprising an upper socket and lower socket, as presently recited in claim 35, or a biting connector, as presently recited in claim 36. However, Official Notice is taken that both the concept and the advantages of utilizing a connecting member comprising an upper socket and lower socket, or a biting connector, as presently

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claimed, are well known and expected in the art. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to replace the third connecting member of Baek with the known connecting member, which comprises either an upper socket and lower socket or a biting connector, because it would allow the signal converting unit easily separated from the second PCB without any special tool, as known by a person of ordinary skill in the art.

Response to Arguments

9. Applicant's arguments filed 9/13/2007 have been fully considered but they are not fully persuasive because as follows:

With respect to the rejections under 35 USC 112, first paragraph, in the Office Action dated 6/13/2007, Applicants' argument is persuasive in light of the amendment to the claims. These rejections are hereby withdrawn.

With respect to the rejections to claims 18 and 37, Applicants argue that the Baek reference teaches the signal converting unit (42) disposed between the front plane of the panel housing 22A and the backlight unit 24 (Baek; Fig. 6) and accordingly, does not and cannot meet the above limitations of independent claims 18 and 37 that the source PC.B and/or the signal converting unit be closely attached to a rear plane of the mold frame/receiving unit. Examiner disagrees because (i) the term, "**front plane**" (of the panel housing 22A) is not found in the Baek reference; (ii) as discussed in the detailed rejection above, the claimed "rear plane" of the mold frame corresponds to a "**bottom surface**" of the panel housing (22A); see Baek; col. 3, lines 54-58 and col. 4, lines 1-3 (note that when a user views the notebook computer of Fig. 6 in a closed state from the top of the notebook, the outside surface of the panel 22A corresponds to the front

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plane and the inside surface (i.e., the bottom surface in col. 3, line 57) of the panel 22A corresponds to the rear plane; and (iii) assuming the bottom surface (in col. 3, line 57 of Baek) corresponding to the front plane of the panel housing 22A as asserted by Applicants (this implies the top surface (or outside surface) corresponding to the rear plane of the panel housing 22A) and since the signal converting unit (42) is mounted (or attached) to the bottom surface (front plane) of the panel (22A) and the top surface (rear plane) of the panel is integrated with the bottom surface (front plane), the signal converting unit (42) is closely attached to the top surface (rear plane) of the panel (22A) (note that "closely attached" does not require "directly attached").

Further, Applicants argue that the match of limitation of claim 18 and element in the Baek reference is not consistent with the match of limitation of claim 37 and element in the Baek reference (see last page of the amendment filed 9/13/2007). Examiner notes that since these claims do not depend upon each other, the inventions of these claims may be obviously read in the Baek reference in different ways.

For the above reasons, the rejections are therefore maintained.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Friday, 6:30 a.m. - 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
October 1, 2007



Jimmy H. Nguyen
Primary Examiner
Art Unit: 2629